IN THE CLAIMS:

Please amend claims 1, 4, 8, and 10, cancel claim 7, and add claims 12 and 13 as follows:

1. (Currently Amended) An encoding device for audio signals, comprising:

a matrix encoder for converting N-channel audio signals (where 'N' is an integer greater than one [[zero]]) to M-channel audio signals (where 'M' is [[an]] a positive integer smaller than 'N');

a matrix coefficient calculation unit for calculating matrix coefficients based on the M-channel audio signals, wherein the matrix coefficients are to be used in decoding of the M-channel audio signals; and

a compression unit for performing compression on the M-channel audio signals, thus producing compressed M-channel audio signals, which are output therefrom together with the matrix coefficients and provided to a decoding device.

2. (Original) An encoding device according to claim 1, wherein the compression unit performs compression in accordance with the MPEG standard.

3. (Original) An encoding device according to claim 1, wherein M is set to four or five while N is set to two, so that the matrix encoder converts four-channel or five-channel audio signals to two-channel audio signals.

4. (Currently Amended) A decoding device for audio signals, comprising:

an expansion unit for receiving compressed M-channel signals (where 'M' is [[an]] a positive integer greater than zero) ~~together with~~ and matrix coefficients from an encoding source, so that the ~~expander~~ expansion unit performs expansion on the compressed M-channel signals to reproduce M-channel signals; and

a calculation unit for performing prescribed calculations using the matrix coefficients on the M-channel audio signals, thus reproducing N-channel audio signals (where 'N' is an integer greater than one [['M']]), wherein the calculation unit includes at least N calculators, each of which performs arithmetic operations using corresponding matrix coefficients within the matrix coefficients so as to convert the M-channel audio signals to an audio signal of a channel within N channels.

5. (Original) A decoding device according to claim 4, wherein the expansion unit performs expansion in accordance with MPEG standard.

6. (Original) A decoding device according to claim 4, wherein M is set to two while N is set to four or five, so that the calculation unit reproduces four-channel or five-channel audio signals based on two-channel audio signals.

7. (Cancelled)

8. (Currently Amended) A decoding device according to ~~claim 7~~ claim 4, wherein each of the calculators comprises M multipliers performing multiplication using the corresponding matrix coefficients on the M-channel audio signals, and an adder for adding together multiplication results produced by the M multipliers respectively, so that the adder outputs the audio signal of the ~~single~~ channel.

9. (Original) A decoding device according to claim 4, wherein the calculation unit is actualized by a digital signal processor (DSP).

10. (Currently Amended) An encoding and decoding system for audio signals, comprising:

an encoding device in which N-channel audio signals (where 'N' is an integer greater than one [[zero]]) are subjected to encoding to produce M-channel audio signals

(where 'M' is [[an]] a positive integer smaller than 'N'), which are then subjected to compression to produce compressed M-channel audio signals ~~in accordance with MPEG standard~~, wherein matrix coefficients are produced by performing prescribed calculations on the M-channel audio signals, and the compressed M-channel audio signals and matrix coefficients are provided to a decoding device; and

[[a]] the decoding device in which the received compressed M-channel audio signals are subjected to expansion to reproduce the M-channel audio signals, which are then subjected to arithmetic operations using the received matrix coefficients to reproduce the N-channel audio signals, wherein a calculation unit performs prescribed calculations using the matrix coefficients on the M-channel audio signals, thus reproducing N-channel audio signals, the calculation unit includes at least N calculators, each of which performs arithmetic operations using corresponding matrix coefficients within the matrix coefficients so as to convert the M-channel audio signals to an audio signal of a single channel within N channels.

11. (Original) An encoding and decoding system according to claim 10, wherein the decoding device is actualized by a digital signal processor (DSP).

12. (New) An encoding and decoding system according to claim 10, wherein the compression unit performs compression in accordance with the MPEG standard.

13. (New) An encoding and decoding system according to claim 10, wherein M is set to four or five while N is set to two, so that the matrix encoder converts four-channel or five-channel audio signals to two-channel audio signals, and the matrix decoder converts two-channel audio signals to four-channel or five-channel audio signals.